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ENVIRONMENTAL GUIDELINES
for
RESPONSIBLE LAWN CARE AND LANDSCAPING

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INTRODUCTION

This document contains a set of recommendations and guidelines for homeowners/consumers creating and maintaining environmentally friendly lawns and landscapes.

Working outside on landscaping projects can:

- ❖ teach you about the local environment;
- ❖ introduce you to the beauty of nature;
- ❖ improve your physical and mental health;
- ❖ add value to residential property

Landscape practices impact water resources, wildlife, and environmental health. Poor landscape practices such as washing [pesticides](#), fertilizers, or pet waste down the storm drain can damage the environment and pose risks to homeowners, children, pets, and wildlife.

Responsible lawn care and landscaping practices provide a variety of environmental benefits to our homes and communities. For example healthy, environmentally friendly lawns and landscapes can:

- ❖ reduce dust and air pollution from the air
- ❖ reduce [erosion](#) and stream sedimentation
- ❖ lower heat and noise levels in urban areas
- ❖ create critical shelter and food for wildlife
- ❖ reduce energy use for heating and cooling of buildings

You can use these guidelines as a general guide to decision making for yard maintenance activities as well as landscape planning and design. By using this guidance, you will learn to make a variety of choices related, but not limited to:

- ❖ plant selection
- ❖ the use of water
- ❖ [pesticides](#) and fertilizers
- ❖ potential affects on wildlife and neighbors

These recommendations do not address every issue or cover the many differences in landscape conditions that exist from region to region. Plant selection and landscape practices in southern Florida are very different than those in Arizona or Montana, but most of the basic principles of stewardship concerning [pollution prevention](#), wildlife protection, and human safety do apply and should be followed.

Recognizing that regional differences are important and that homeowners and gardeners need site-specific guidance, we recommend that you contact the Cooperative Extension Service for objective, complete answers about regional landscape issues.

GETTING TO KNOW YOUR SITE

Knowing the unique needs and circumstances of your site is the first step in planning and maintaining a healthy and environmentally friendly landscape. Understand that landscapes are dynamic and as they mature, maintenance requirements change.

Take the following actions to get familiar with your site. Then continue to **Part I: Landscape Design and Installation**.

🔗 **Observe** your yard during each season and note areas of shade, sun (follow the shadow for a day), and exposure to wind to assist in the proper placement of plants and to make other landscape decisions.

🔗 **Identify** individual species of plants and their particular needs for sunlight, water, soil, and nutrient conditions. Plant information is available on the internet, at your local library, a local nursery, from your Cooperative Extension Service, or local plant and garden societies.

🔗 **Learn** about local wildlife by observing natural visitors to your yard. Identify species of birds, mammals, insects and other organisms and their habitat needs from local wildlife agencies and organizations or visit your library or on-line information sources. Consider what natural plant community existed on your site prior to development. This kind of information will help you decide how best to protect or manage certain kinds of wildlife in your yard.

🔗 **Understand** basic soil characteristics. This information can help in plant selection, irrigation, and fertilization planning. Dig a one-shovel depth hole to examine soil texture and composition. For example, clay soil can be rolled into a marble-sized ball when damp (or a shiny ribbon when pressed out) and sandy soil just falls apart. It is a good idea to confer with a Cooperative Extension Service or landscape professional to determine whether a soil test would be useful to learn more about your soil. A soil test may be required or useful in your area.

🔗 **Examine** your yard and note whether there are [swales](#) or uneven areas. These landscape features can affect drainage or cause puddling, and influence the location and types of landscape plantings, surfaces, and irrigation planning.

🔗 **Know** the square footage of your yard. Square footage is generally a factor for calculating things such as the amount of fertilizer or [pesticide](#) that is needed. To determine square footage, measure the size of your yard using a tape measure. Don't forget to subtract out hard surfaces such as driveways, decks, patios, walls, etc. As a substitute, you can also measure your typical stride and pace off width and length to get the dimensions of your yard. Using your measurements, map out your property from a birds-eye view on graph paper to scale.

🔗 **Note** the presence and proximity to bodies of water such as lakes, streams, rivers, or wells. You should protect bodies of water with [buffer strips](#) that can intercept or slow down runoff.

PART I: LANDSCAPE DESIGN & INSTALLATION

How should I analyze the site before landscaping begins?

- Prepare a base map (to scale) of your property showing property lines, utility lines, existing structures, walks, driveways, areas of sun and shade, trees, streams, ponds, drainage patterns, and other important features.
- Evaluate the types of activities and functions you would like to enjoy on the property and the appropriate size and location of each, taking into account site characteristics such as [topography](#), neighboring land uses, site orientation, existing vegetation, etc.
- Design outdoor areas and facilities to be modified easily with the changing needs of your family.
- Visit demonstration gardens and landscapes at nurseries, botanical gardens or state/local agencies in your area to get ideas for regionally appropriate landscape designs and plant choices for water conservation, wildlife, and low maintenance.
- Planting [deciduous](#), [native](#) shade trees on the south and west side of the house can reduce summer cooling costs and lower energy consumption.
- Shrubs and trees in the home landscape can serve as barriers to unwanted noise and screens to protect privacy or block undesirable views.
- In homes exposed to winter winds, a tall evergreen windbreak planted on the windward side of the home can reduce heating bills and energy consumption.
- In areas where wildfires are a concern avoid dense trees and shrubs close to buildings. Consult with the local Cooperative Extension Service about appropriate fire suppression planting and methods.
- On your own or with the help of a landscape professional draw up a landscape design plan on the base map that shows new construction of walks, patios, decks, etc. List all new planting by plant species, and designate conservation/wildlife areas and other measures to protect natural resources.

What landscape techniques will conserve water?

- Consider a [xeriscaping](#) approach and the use of [native](#) or low maintenance plants that thrive under existing climate conditions and soils.

- Different plants need different amounts of water. Divide your yard and landscape areas into separate irrigation zones so that you can water grass separately from groundcovers, shrubs, and trees. Both sprinkler and drip irrigation systems can be incorporated to achieve more efficient use of water.
- Shaded areas of a planting of a given species require less water than the same species in full sunlight.
- Design irrigation systems to minimize water use through drip systems, automatic shut-off devices, and appropriate sprinkler components to meet – but not exceed – the needs of the plants.
- Consult a qualified professional to determine appropriate irrigation schedules and total water needs for the planned landscape.

What landscape techniques are wildlife-friendly?

- Trees, shrubs, and other plants in the residential landscape can provide food, shelter, and nesting sites for wildlife. Add diversity with [native](#) plants, fruit or berry producers, or evergreen species for year-round cover.
- Flowering [annuals](#), [perennials](#), shrubs, and trees can add color to the yard and attract birds, bees, and butterflies by providing nectar, pollen, seeds, or fruit. The use of native species is encouraged.
- Provide nest boxes for cavity-nesting birds and roosting boxes for bats, nesting blocks and bare ground for native bees, and host plants for butterfly caterpillars.
- Consider adding a backyard pond or birdbath to provide water for wildlife. Since mosquitoes are a potential problem and a health issue, check with your local health officials or Cooperative Extension Service on the best methods to control them.
- Help wildlife find shelter from weather and predators by providing areas with evergreens, ground cover, brush piles, thicket, or bramble patches. Log piles for wildlife habitat are an option that you can consider in certain circumstances. Check with your local municipality to ensure there are no restrictions against brush and compost piles.
- Mimic natural habitat by grouping plants in same-species clusters and creating overlapping layers.
- Connect vegetated areas to create habitat corridors for wildlife travel.

- Preserve existing native vegetation through sensitive site planning and proper construction techniques.
- Plant well-adapted species that can provide wildlife food in different seasons.
- Permanently remove [invasive](#) plants that reduce [biodiversity](#) and can pose a threat to wild areas and wildlife habitat.
- If you have problems with deer, choose plants that are resistant to deer foraging. Check with your local Cooperative Extension Service office for recommendations for how best to deal with “problem” wildlife such as rats, snakes, moles, skunks, etc.
- Encouraging healthy populations of natural predators may reduce the need for [pesticides](#).

How do I choose plants for the site?

- Putting the right plant in the right place will reduce fertilizer and [pesticide](#) use and the need to possibly replace the plant in the future.
- Choose turf and other plant varieties that are suited to your conditions. Consider [native](#) species, those with pest and disease resistance and drought tolerance.
- Avoid plants with [invasive](#) growth or seeding habits.
- Do not over plant. Over-planting will cause further problems. Consider the mature size of each plant and its space requirements during landscape planning and installation.
- Consult city arborists, foresters, or public utilities if selecting tree species for public rights-of-way. Consider mature tree height when planting under utility lines.

What other environmentally friendly materials should I consider?

- Consider bio-based, recycled content, and other environmentally preferable aspects in your purchasing decisions. Products such as plastic lumber made from recycled bottles and bags or hoses and lawn edging made from recovered plastic and old tires help sustain recycling efforts, conserve resources, and reduce waste.
- Save bedding trays and plant containers from annuals and other plants and send them to a recycler for processing or ask your nursery if they can reuse them.

- Consider hardscape materials for walks, driveways, and patios that create a porous surface for easy water penetration and reduction of runoff.

How do I prepare the site for landscaping?

- Ensure an adequate depth of quality soil in all planting areas. This may require the importation and spreading of quality topsoil to areas that have been scraped or so heavily compacted by construction activities that they can't support landscape planting.
- Prepare your soil with the appropriate grading, soil amendments, and conditioning to give new plants the best growing potential. A soil test may be required.
- Prevent soil [erosion](#) and sedimentation in surface waters and stormwater systems by installing erosion barriers, fences, turfgrass sod, groundcovers, or mulches at appropriate locations.
- Check with your local utilities or state's utility locator service before digging more than 6 inches below the surface. Know the location of cable, phone, gas, water, and electricity lines.
- When removing unwanted turf and other plants, consult your local Cooperative Extension Service for alternative methods.

What should I know about drainage?

- Drainage systems are water-collection devices to manipulate the movement of water. Components of drainage systems occur in various forms, such as [swales](#) (natural or constructed), area drains, and subsurface pipes that direct concentrated surface runoff into an underground network connected to the city's stormwater system.
- Other forms of drainage, including gullies and [sediment](#) basins, serve to recharge the groundwater table or [aquifer](#). Areas prone to landslides should be identified and avoided.
- If possible, design landscapes to reduce the amount of runoff entering storm sewers.
- Consider creating rain gardens in depressions and plant with [native](#) wetland plants.

- Ensure that the runoff from any drainage conveyance you have installed doesn't negatively impact a neighboring property. You may be liable for any damages created by water leaving your property.
- In addition, consider taking the following actions to provide adequate drainage on the site:
 - ✿ Conform to natural drainage patterns.
 - ✿ Minimize alteration of natural drainage patterns around existing vegetation that you want to preserve.
 - ✿ Provide opportunities for surface runoff to replenish the groundwater table.
 - ✿ Minimize soil [erosion](#) by designing for even water flow across the ground surface.
 - ✿ Reduce water velocity and increase soil permeability with plantings and [mulch](#) – on steep slopes or areas that are prone to landslides avoid using plants that require supplemental irrigation.
 - ✿ You should not install permanent irrigation systems in landslide hazard areas.
 - ✿ Implement erosion control devices as a form of preventative maintenance, e.g., slope protective material, protective berms, or silt fences.
 - ✿ Ensure plans for the drainage system include a maintenance schedule.

How do I plant a new lawn and/or landscaping plants?

- Choose a turfgrass adapted to your site, climate, and lifestyle. Consider as an alternative a lawn made of low maintenance grasses or groundcover. Consider daily sunlight needs (5-6 hours) and the [pest](#), disease, and drought tolerance of the turfgrass variety. Consult your local Cooperative Extension Service or qualified plant professional.
- Make selection of plant species appropriate to intended use and desired aesthetic effect.
- Sod has been shown to greatly reduce soil [erosion](#) in new lawn establishment and requires significantly less water than seed to establish.

- Soil structure can be damaged if you cultivate the soil when it is wet.
- Mix soil and amendments together before planting.
- Create a smooth surface free of dirt clods, pebbles, and stones that are larger than an inch across.
- Maintain good soil moisture for new lawn and plants but do not water excessively. Contact you local professional or Cooperative Extension Service or water utility for recommended irrigation practices and amounts.

PART II: LANDSCAPE MAINTENANCE

SOIL

Is my soil healthy?

- Determine the [pH](#) of your soil and follow recommendations for adding needed soil amendments. Soil testing is strongly encouraged to determine if fertilizers or soil amendments are needed. Allow enough time for the soil to fully react after an amendment application before testing again.

If needed, how do I choose what fertilizers and supplements to use?

- Follow Cooperative Extension Service recommendations for optimum lawn and landscape fertility management programs. These recommendations include information on factors such as site, plant species, and time of the year that influence fertilizer selection.
- Use “slow release” fertilizers to increase the efficiency of nutrient uptake and reduce nutrient runoff and leaching. However, there may be situations when more soluble nutrient sources are appropriate.

How do I use the fertilizers and supplements?

- Read and follow the label directions. Do not exceed recommended fertilizer applications – excess fertilization can damage plants and contribute to runoff and water pollution.
- Unless otherwise directed on the label, water your lawn after fertilizing. Do not allow water to runoff into streets or surface waters.
- You should promptly clean up any fertilizer spilled on roads or sidewalks.
- Never apply fertilizer to frozen ground or snow.
- When applying fertilizer, maintain or develop a [buffer strip](#) away from the edge of streams, ponds, lakes, wells or other bodies of water. Check your local regulations for appropriate width for buffer strips.
- For some grass species and at certain times of the year, herbicides and fertilizer should be applied separately to maximize plant uptake and minimize runoff. Therefore, in such situations, there may be times when “[weed](#) and feed” or other combination products are inappropriate. See the **Pest** section for more information. See the label instructions for specific grass species and season information.

- Check to see that your fertilizer spreader/applicator is working properly and can be adjusted to apply the right amount of fertilizer.

How do I use compost or organic amendments (manures)?

- Compost contributes [organic](#) matter, micronutrients, and trace minerals to most soils. Compost also improves soil structure, and increases soil [aeration](#), moisture, and nutrient holding capacity.
- Grass clippings, leaves, vegetable and fruit scraps, and most garden waste can be composted and (re)applied to your landscape to save expensive landfill space. Check local regulations concerning composting guidelines first.
- [Organic mulch](#) (such as wood or bark chips, grass clippings, leaves, and compost) are best used in the landscape or garden to cover bare soil and help control [weeds](#), retain soil moisture and structure, and add nutrients.

When should I use lawn aeration?

- Soil compaction problems can be confused as insect, diseases, nematode damage, improper watering, or a lack of fertilizer. The problem starts when the top four inches of the soil becomes compressed, impeding the movement of air, water, and nutrients to the grass roots. This stresses the grass plant, making them less able to compete with [weeds](#) and slow to recuperate from injury.
- Soil compaction can be corrected with aerifying by core [aeration](#), which will physically remove cores of soil and leave holes or cavities in the lawn. Core aeration will promote root development through reduced soil compaction, improve nutrient and moisture absorption, and discourage thatch development.
- For small areas, purchase a sod-coring tool that removes cores of soil from the lawn that should be deposited on the lawn. For larger areas, rent a power-driven core aerator, or hire a professional to do it for you.

WATER CONSERVATION

What landscaping features can help me conserve water?

- Consider choosing [native](#), non-invasive or drought-resistant ground covers, beds of [perennials](#), trees, shrubs, or landscape features composed of porous materials (mulched or crushed stone walkways, sitting areas, etc.) rather than irrigated turf.
- [Mulch](#) bare soil to reduce evaporation, [erosion](#), and [weed](#) growth.

How can I water my lawn responsibly?

- Water your lawn only when the color dulls and footprints stay compressed for more than a few seconds.
- Depending on the grass variety during extended periods of drought or low rainfall don't irrigate and let some or all portions of the lawn go dormant.
- Water deeply when necessary. Wet the soil to root depth or six inches – whichever is less. If there is a danger of runoff, water a few times for shorter periods and take 15 minute breaks between each watering session (instead of watering for one long session). This process will allow water to soak in while minimizing runoff.
- Aerate and hand water brown or dry spots (from drought stress) in an actively growing lawn. Don't over-water the entire lawn to take care of a few problem areas.
- Water before 10:00 a.m. when the sun is low, winds are calm, and temperatures are cool to reduce evaporation and disease problems.
- Do not allow water to run onto paths, sidewalks, driveways, and roads.

When irrigating my lawn, what should I do to conserve water?

- Make sure sprinklers or sprinkler heads are adjusted properly to avoid watering sidewalks and driveways. A properly adjusted head should spray large droplets of water instead of a fine mist to minimize evaporation and wind drift.
- Install a rain shut-off device on automatic sprinklers; the device will turn off the system when it detects rain or moisture. These devices are inexpensive and enable you to take advantage of rainfall without having to pay for it.
- Periodically check your sprinklers to make sure everything is working properly. A clogged head or a leaking line can wreak havoc on your landscape and water bill.

What other approaches can I adopt to conserve water?

- Use low-volume drip irrigation systems for watering individual trees, flowerbeds, gardens, potted containers, or other non-grass areas. (They use 30 – 50% less water than typical sprinklers). This technology will reduce water waste through evaporation or runoff and prevent unwanted [weeds](#) from growing. Drip irrigation may be inadequate for mature trees and shrubs whose roots extend well beyond the area covered by the drip.

- In some regions collecting water from rooftops through a system of rain gutters and properly screened rain barrels can provide additional water for irrigating flowers and shrubs during low water periods. Take precautions to avoid stagnant water or other places for mosquitoes to breed.
- You can use gray water (household wastewater from sinks, bathtubs, and showers – but not toilets), or condensate from air conditioners for landscape irrigation, in certain parts of the country. Check local regulations or guidelines to find out whether there are gray water use restrictions in your area.

PESTS

What is the first step in pest management?

- Accurately identify the problem or suspected [pest](#) and make sure the pest control method you choose is appropriate for use on that plant or pest. For assistance in identifying a pest and the best control strategy, contact your local Cooperative Extension Service.
- Not all bugs are pests. Before spraying a [pesticide](#) learn to identify the bugs in your garden and how to telltale signs of a pest infestation.
- You should remember that pesticides can provide effective treatment of serious pest problems but they should not be used routinely or indiscriminately. Improper use of pesticides can result in pest resistance and can harm humans, pets, beneficial organisms, and the environment.

How do I control pests using Integrated Pest Management (IPM)?

- Effective [pest](#) control does not necessarily require the use of chemical [pesticides](#). There are numerous non-chemical practices and reduced-risk materials that can prevent and control pest infestations as part of an IPM approach. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.
- Proper choice of landscape elements, physical removal of pests (insects and [weeds](#)), traps, lures, and barriers can keep pest populations in check.
- Explore the use of horticulture oil sprays, insecticidal soaps, microbial pesticides, and [biological control](#) by contacting your local Cooperative Extension Service.

- Make naturally occurring pest enemies welcome in your yard. Consider providing the food, water, and shelter that toads, dragonflies, ladybugs, and other natural allies need.
- Maintain healthy soil and plants. They are more resistant to pest attacks.
- Pull weeds by hand.
- Wear gloves to protect skin.

If chemical control products are necessary, how do I use them properly?

- Read the entire product label for all products, whether natural, [organic](#), or synthetic before use and follow instructions. Labels are carefully written and precautionary statements are there for a good reason and should not be ignored. More or less is NOT better. Using less may be ineffective or create other problems. Use only the amount directed under conditions specified on the label. The label is the law.
- Keep children and pets away from [pesticides](#) at all times. Teach children that pesticides can be harmful and should not be touched or consumed.
- Store and dispose of pesticides and their containers according to label directions and any local, state, and federal regulations.
- Wear protective gear and clothing when indicated on the label.
- Do not smoke, eat, chew gum, or drink when handling pesticides. Always wash your hands afterwards.
- Apply “ready to use” materials whenever possible. If a concentrate is selected dilute the product according to the label directions, mixing the smallest quantity that will do the job and use it completely. When mixing or measuring pesticides use a dedicated set of spoons or cups, then mark them and store them individually with each pesticide so they will not be used for any other purpose.
- When buying pesticides, chose the formula that is least hazardous to wildlife. Carefully read environmental hazards labeling that can indicate a variety of birds, mammals, bees, and aquatic organism concerns.
- Never remove labels or transfer pesticides to other storage containers. It is especially important to emphasize the danger of placing pesticides in improper or unmarked containers.

- Do not give or purchase pesticides for individuals who cannot read or understand the label (for example, those who cannot read English).
- Do not spray pesticides on windy days. When using pesticides ensure that they do not drift beyond the application area.
- When selecting pesticides choose those that pose the least risk but will control the identified [pest](#). For more precise pesticide decisions use products recommended by the Cooperative Extension Service or a licensed pesticide applicator. The pesticide's potential acute risk is indicated by the signal word on the label:

“Signal” words, such as **Danger**, **Warning** or **Caution**, are part of the precautions found on pest control product labels. The labeling of the most toxic products will use “Danger-Poison,” but most of these products can only be bought and use by trained professionals. Except for “Danger-Poison,” signal words, while indicating level of hazard, do not in themselves identify what hazard may be associated with a product – so all label precautions should always be read.

Danger: A signal word of “Danger” alone means the product can be corrosive (causes burns) to skin or to eyes. Read the label to know what the hazard is. Take extreme care in handling corrosive products, to keep them from getting in your eyes or on your skin. Always be sure to store products properly.

Warning: A signal word of “Warning” means there is a moderate hazard associated with the product, although you need to read the rest of the precautions on the label to know what it is. The product may be moderately toxic, but on the other hand, may not be toxic at all and instead pose a different hazard, such as being very irritating to eyes or skin. The label will tell you what the hazards are and what precautions to take.

Caution: “Caution” as a signal word means that it is in the lower category of toxicity and that care should be taken in using it. Again, read the label to see if the product has specific precautionary statements. Even if there are no specific hazards, a signal of Caution may still be in the label. Always read the label first and follow directions.

- Be aware that the risks of some pesticides may be very different for humans, birds, bees, butterflies, aquatic organisms, and other wildlife. Under “environmental hazards,” the label will tell you if the product can cause environmental damage – if it is harmful to birds, bees, fish, endangered plants or animals, wetlands or water. The absence of an environmental hazard statement does not necessarily mean there is no risk to an organism.

- Use consideration and judgment when handling pesticides and do not apply when people, pets, or wildlife are in the area of application. It may be appropriate in some situations to alert family, guests, and neighbors before you begin application.
- Review first aid information and know the signs of pesticide exposure provided on the label before using a pesticide.
- Be aware that some pesticides are non-specific and may pose a risk to beneficial organisms. Many insects are beneficial and help control those that are problems. Read the label to select the product for the pest you have identified and to understand possible risks to other organisms.

What are some pollution prevention techniques?

- Spot treat for [pest](#) control whenever possible.
- Use water to rinse out a sprayer or other application equipment. Apply rinse water to the site with the same precaution you used for the [pesticide](#).
- Do not apply a pesticide in or near water sources unless the product label specifically indicates that it has been approved for that use.
- Do not reenter an area treated with pesticides until the spray has dried, dust has settled, or as directed on pesticide label.
- Discard old, poorly labeled, or discontinued pesticide products in a safe manner. Do not pour pesticides labeled for outdoor use down toilets, drains, storm sewers, or place in trash receptacles. Contact local solid waste management, municipal agencies, or your Cooperative Extension Service for disposal guidelines.

What should I do with my pets when I apply pesticides?

- Do not apply [pesticides](#) when pets are in the yard – they could be exposed during the application.
- Follow label directions and precautions regarding reentry of pets into areas treated with pesticides.
- Remove feeding bowls, water dishes, and cover birdbaths before pesticide application.

MOWING AND PRUNING

What should I do to service my mower?

- Keep your mower blades sharp; dull blades tear the grass and make it more vulnerable to [pests](#) and disease and cause increased water loss and reduce plant vigor.
- Properly tune your mower for maximum performance to minimize air pollution.
- Fill the fuel tank outdoors, in an open area, and when the engine is cold. Wipe up any gasoline that spills.
- Do not fill the fuel tank completely full. Allow some space for the gasoline to expand.
- Never smoke when handling gasoline, and stay away from an open flame or where a spark may ignite the gasoline fumes.
- Store gasoline in an approved fuel container and keep it out of the reach of children.

What are good practices for mowing?

- Mow when grass is dry and never cut more than one-third of the height of the grass. Leave short clippings on the lawn to add nitrogen back in the soil and reduce the need for fertilizer.
- Do not put excess grass clippings down the storm drain or blow grass clippings into the street for street cleaning trucks to pick up. Instead, [compost](#) on site.
- Mow your lawn at the highest recommended height to retain moisture and prevent [weeds](#). Check with the local Cooperative Extension Service for recommended mowing heights for your variety of turfgrass.

What about pruning?

- Improper pruning cuts and unattended wounds increase the potential for disease problems. Consult a Cooperative Extension Service or other professionals for proper pruning techniques.

YARD WASTE AND DEBRIS

What should I do with yard waste and debris?

- Burning yard waste is not a recommended disposal method. Not only is it a fire hazard, but it can create toxic fumes and ash which can aggravate respiratory conditions, such as asthma.
- Compost excess yard waste on site.
- Composting excess yard waste can turn [organic](#) matter into valuable soil amendments and [mulch](#) for garden and landscape use. Decomposing microorganisms need four key elements to thrive: nitrogen, carbon, moisture, and oxygen. For best results, mix materials high in nitrogen (such as fresh grass clippings) and those high in carbon (such as dried leaves). Sprinkle the pile with water to keep it damp and turn or mix the material to supply the oxygen. More turning yields faster decomposition.
- Where appropriate, chip woody shrubs and tree prunings into mulch that you can applied to the landscape.
- If using compost as mulch is not an option, dispose of your yard waste according to local laws and regulations.

PETS

Can pet waste harm the environment?

- Droppings from dogs and cats and from other commonly kept animals like exotic birds, rabbits, goats, and chickens may contain bacteria, parasites, nutrients, or viruses that are a health risk to other pets and people, especially children. If pet waste is washed into a storm drain it can end up in a lake, river, creek, or coastal waters.
- Pet waste is a contaminant in many streams and rivers. Keep pet waste away from gardens, ditches, storm drains, and waterways. Dispose of pet waste by burying it 5 inches deep, flushing it down the toilet, or placing it in the garbage can or pet waste digester. Do not use pet waste for compost.
- Always carry a bag and scooper when walking a pet to clean up after them.
- Do not leave pet waste on driveways, sidewalks, or [impervious surfaces](#) where it can wash into storm drains, streams, or waterways.

PART III: ADDITIONAL TIPS

What lawn & garden products, services, and equipment should I purchase?

- A mulching lawnmower commonly available in garden and hardware stores will help you to maintain a healthy lawn by providing natural fertilization from grass clippings.
- Consider using a manual (reel) mower for small lawns. A reel mower is quiet and pollution free– not to mention great exercise!
- Consider using electric mowers and garden tools that are quieter and less polluting than gas powered ones.
- If you hire a lawn care company, select one that advocates and follows state recommended Best Management Lawn Practices. Ensure the company is legally licensed to apply [pesticides](#), has good references, and is a member of a professional lawn care organization.
- For tree problems avoid contractors that come to your door soliciting your business. Use a qualified arborist.
- Good record keeping helps schedule future activities and saves money.

PART IV: COMMUNITY ISSUES

- Each community has characteristics that are unique and may present special challenges concerning architecture, water use, [pest](#) control, and landscaping. It is the responsibility of every citizen to learn and attempt to address the unique characteristics and special challenges of their community.
- Consider neighbors when planning or modifying drainage from your property.
- Consider neighbor's sunlight needs when planting trees.
- Consider reducing noise from lawn and landscaping equipment, especially between 5:00 p.m. and 8:00 a.m. when neighbors might be entertaining, sleeping, etc.
- Be considerate and allow no drift or movement of materials from your yard to neighboring yards.
- Consider leaving standing dead or dying trees in your yard for wildlife habitat unless they pose human safety or property hazard. Consult your Cooperative Extension Service or a tree professional to insure tree is safe to keep. Also consult local regulations. Cooperate with neighbors to create larger patches of wildlife habitat or to connect vegetated areas to create habitat corridors for wildlife to travel through.
- Most landscapes, if well maintained, are aesthetically pleasing and contribute to the appearance of the overall neighborhood. Research shows that landscaping has a significant positive effect on the selling price of a home.
- Help to educate neighbors and your community about the environmental and safety benefits of responsible landscaping practices.

PART V: ADDITIONAL INFORMATION ABOUT THIS GUIDANCE

This guidance was developed by a coalition of diverse organizations through a consensus-based process. The coalition -- known as the “Lawns & the Environment Initiative” -- works together to educate and encourage the public to adopt responsible lawn and landscaping practices. These practices include appropriate use of chemicals, water, plant species, and other stewardship principles that will enhance the value and benefits of residential landscapes to homeowners, wildlife, and the community.

Many different organizations participated in the formulation and drafting of the guidelines. The principle organizations and individuals that worked together in writing the guidelines include the following:

Members of the Lawns & the Environment steering committee:

Thomas A. Bewick

USDA – Cooperative State Research, Education,
and Extension Service

Ed Brandt

USEPA - Office of Pesticide Programs

Thomas J. Delaney

Professional Lawn Care Association of America

Calvin Finch

San Antonio Water System

Geoff Galster (replacement to be named)

American Nursery & Landscape Association

James L. Green

USDA – Cooperative State Research, Education,
and Extension Service

Allen James

RISE - Responsible Industry for a Sound
Environment

Paul Lapsley

US EPA - Office of Policy, Economy and
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Anita Matlock

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Nancy Nelson

Center for Resource Management

Paul Parker

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Tess Present

National Audubon Society

Carrie Riordan

Golf Course Superintendents Association of
America

Mary Ann Rozum

USDA – Cooperative State Research, Education,
and Extension Service

Chris Schmenk

The Scotts Company

Lori Ward

National Wildlife Federation

Mary Lynn Wilhere

Businesses for the Bay/ Alliance for the
Chesapeake Bay

Bruce Williams

Agronomy and Horticulture Services LLC

Other organizations who contributed to the development of the guidelines include:

- Coevolution Institute
- North American Pollinator Protection Campaign
- United States Golf Association
- Xerces Society

Organizations that reviewed the document and have officially endorsed the guidelines include the following:

(organizations to be listed here)

Members of the “Lawns & the Environment Initiative” join together in the hope that the guidelines will help make our lawns and landscapes more environmentally sustainable and that we can all enjoy and appreciate the value and benefits of the home landscape.

Glossary

annuals -- A plant whose natural term of life is 1 year or 1 season; especially, any plant that grows from seed, blooms, fruits, and dies in the course of the same year. (2)

aeration or aerification -- The cultural practice of improving air, water, and nutrient movement in soil by making holes or slits in the soil or turf. Specialized machines are commonly utilized to remove cores, cut slices, or pierce the soil. (9)

aquifer -- A water-bearing layer of rock or sediment capable of yielding usable quantities of water, composed of unconsolidated materials such as sands and gravel, or consolidated bedrock such as sandstone or fractured granite. (4)

beneficial organism -- An animal or plant used to control garden pests. (2)

biodiversity -- The sum of all the plants, animals and other organisms living on Earth. (1)

biological control -- The use of living organisms – parasites, pathogens or predators – to control an invasive or other pest species. (1)

compost (garden compost) -- An organic matter such as well-decayed leaves, grass clippings, and vegetable waste, added to the soil as an amendment to improve its texture and drainage and to enrich it with nutrients. (2)

deciduous -- Falling off at maturity or at the end of the season, as petals, leaves, fruit, etc.: as distinct from fugacious or caducous organs, which fall soon after their appearance, or from persistent or permanent; not evergreen. Losing the foliage every year; made up of or having deciduous parts: as, deciduous trees. (2)

erosion -- The wearing away of the land through the action of moving water, wind, or other geological agents. (2)

ground water -- 1. Water that flows or seeps downward and saturates soil or rock, supplying springs and wells. The upper surface of the saturate zone is called the water table. 2. Water stored underground in rock crevices and in the pores of geologic materials that make up the Earth's crust. (6)

impervious surface -- A surface through which water cannot penetrate.

integrated pest management -- IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.

invasive -- A species that is (1) non-native (or alien) to the ecosystem under consideration and (2) whole introduction causes or is likely to cause economic or environmental harm to human health. (8)

mulch -- Any of various organic or inorganic materials, such as leaves, hay, straw, manure, or black plastic, spread around plants to prevent moisture loss and discourage weed growth. (2)

native -- A species that naturally occurs in a particular region, ecosystem and habitat. Species native to North American are generally recognized as those occurring on the continent prior to European settlement. (1)

natural area -- An area of land or water with predominantly native vegetation or natural geological features that is allowed to respond to the forces of nature with minimal human influence. (1)

non-native -- A species that, due to direct or indirect human activity, occurs in locations beyond its known historical or potential natural range. Refers to species from another continent, region, ecosystem, or habitat. (1)

organic -- A term referring to any material that is derived directly from plants or animals (2).

perennial -- In botany, continuing more than 2 years; used specifically of a plant that dies back seasonally, but produces new growth from a persisting part, as a perennial herb. (2)

pesticide -- Any substance used to kill, repel, prevent, destroy, or mitigate a pest problem. They include fungicides, insecticides, herbicides, and bactericides (2).

pest -- A plant, animal, or other organism considered harmful. (1)

pH -- A measure of the relative acidity or alkalinity of water. Water with a pH of 7 is neutral; lower pH levels indicate increasing acidity, while pH levels higher than 7 indicate increasingly basic solutions. (6)

pollution prevention -- Pollution prevention consists of any activity or strategy that eliminates or reduces the use of toxic substances, conserves water or energy, and eliminates (or reduces) the generation of nonproductive output, hazardous waste, air emissions, wastewater, or other pollutants. (5)

stormwater runoff -- Water that rushes off the land and other surfaces during rain events. Stormwater runoff often carries sediments and pollutants with it. (3)

sediment -- Usually applied to material in suspension in water or recently deposited from suspension. In the plural the word is applied to all kinds of deposits from the waters of streams, lakes, or seas. (6)

swales (grassy swale) -- Grassy depressions in the ground designed to collect stormwater runoff from streets, driveways, rooftops and parking lots. The grass in the swale removes pollutants from stormwater as the water infiltrates into the soil. The treated water recharges groundwater supplies. (7)

topography -- The shape of the ground's surface like hills, valleys, plains, and slopes (2).

vegetated buffer strip or zone (adapted from NRCS definition) -- A strip or small area of vegetated land, maintained in a permanent naturalized state, that is designed to intercept pollutants and manage other environmental concerns.

watershed -- All the land that drains into a certain water body.

weed -- A subjective word used to describe any plant growing wherever someone wishes it did not; can include native and non-native plants. (1)

xeriscaping -- A method of landscaping that uses plants that are well adapted to the local area and are drought-resistant. Xeriscaping is becoming more popular as a way of saving water at home. (6)

Sources

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<http://garden.garden.org/dictionatry/dictionary.php>.
3. Better Backyard: A Citizens' Resource Guide to Beneficial Landscaping and Habitat Restoration in the Chesapeake Bay Watershed. CBP 219/09, EPA 903-B-99-002. November 2001.
4. Minnesota Sea Grant, University of Minnesota
<http://www.seagrant.umn.edu/groundwater/pdfs/GWglossary.pdf>.
5. Pollution Prevention Regional Information Center. <http://www.p2ric.org/>.
6. U.S. Geological Service (USGS) Water Science Glossary of Terms.
<http://ga.water.usgs.gov/edu/dictionary.html>.
7. University of Wisconsin - Extension, Water Resources Program, <http://clean-water.uwex.edu/>.
8. U.S. Government, Executive Order # 13112, www.invasivespecies.gov.
9. Turfgrass Science and Management, 3rd edition, Robert Emmons, Delmar Publishing (modified).

Information Resources

Biological Control: A Guide to Natural Enemies in North America

<http://www.nysaes.cornell.edu/ent/biocontrol/>

Cornell Cooperative Extension

The Homeowners Lawn Care Water Quality Almanac

Learn how to take care of your lawn without contributing to pollution of your watershed

<http://www.hort.cornell.edu/gardening/lawn/almanac/index.html>

Invasivespecies.gov

A gateway to Federal and State invasive species activities and programs. Includes profiles of invasive plants and other organisms, links to management practices, and much more

<http://www.invasivespecies.gov/>

IPM: A Common Sense Approach to Managing Problems in Your Landscape

Home and Garden Information Center, University of Maryland, Maryland Cooperative Extension.

<http://www.montgomerycountymd.gov/mc/services/dep/Grasscycling/commonsense.pdf>

Nationwide Extension Information Search Engine

PlantFacts

<http://plantfacts.osu.edu/web/>

State Master Gardener Coordinators

<http://www.ces.uga.edu/agriculture/horticulture/master%20gardener/stcoord.html>

U.S. Department of Agriculture

Map/directions with links to the Extension Service Office in each state

<http://www.reeusda.gov/1700/statepartners/usa/htm>

U.S. Environmental Protection Agency

Polluted Runoff (Nonpoint Source Pollution)

Information and resources for reducing nonpoint source pollution

<http://www.epa.gov/owow/nps/whatis.html>

**U.S. Environmental Protection Agency
Greenscapes**

<http://www.epa.gov/greenscapes>

U.S. Environmental Protection Agency, Green Landscaping with Native Plants

Landscaping with Native Plants Factsheet

Excellent compendium of native plant information and resources

<http://www.epa.gov/greenacres/nativeplants/factsht.html>

U.S. Environmental Protection Agency, Watershed Information Network

Tools to identify your watershed and resources to help you protect it

<http://www.epa.gov/win/>

U.S. Environmental Protection Agency, Water Use Efficiency Program

Downloadable PDF files with valuable information on water efficiency.

<http://www.epa.gov/owm/water-efficiency/index.htm>

USDA Natural Resources Conservation Service

Backyard Conservation Web Site

Excellent downloadable resources covering a range of backyard conservation topics from composting to water conservation to creating a backyard wetland

<http://www.nrcs.usda.gov/feature/backyard>

USDA Natural Resources Conservation Service

Native Plants and Gardening Links

List of native plant resources including native gardens, seed sources, and much more

http://plants.usda.gov/cgi_bin/links.cgi?earl=link_categories.cgi&category=linknative